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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,055	03/15/2001	James Andrew DeLong	047045-2087	7273

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EXAMINER

YENKE, BRIAN P

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,055

Applicant(s)

DELONG, JAMES ANDREW

Examiner

BRIAN P. YENKE

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by applicant's admitted prior art (AAPA).

In considering claim 9,

a) the claimed a source unit to generate a spatially uniform light beam... is met by AAPA

(Fig 1) which discloses a source unit 101.

b) the claimed an imaging unit... is met by imaging unit 109 and DMD 118 along with projection lens 119, which includes paths (1st, 2nd) between the respective devices

c) the claimed a projection lens is met by projection lens 119

d) the claimed the first beam path... is met where source unit 101 sends a beam path to first folded mirror 114 (Fig 1), a second beam path from mirror 114 to concave mirror 116, a third beam path from concave mirror 116 to DMD 118, and a fourth beam path from DMD 118, to projection lens 119 (Fig 1).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyawaki, US 6,683,657.

In considering claims 1 and 9-10,

a) the claimed a source unit to generate a spatially uniform light... is met by light source 301 and parabolic reflector 302 (Fig 10).

d) the claimed a first reflecting mirror... is met by mirror 303 (Fig 10).

e) the claimed a second reflecting mirror is met by reflecting mirror 307 (Fig 10)

f) the claimed a DMD... is met by DMD 309 (Fig 10), which receives the light beam reflecting by the reflecting mirror 307), wherein the third beam path (mirror 307 to DMD 30 via lens 308) is in a upward vertical direction which is different then the 2nd beam path (horizontal).

g) the claimed a projection lens... is met by projection lens 314 which receives the light from DMD 309 via lens 308, wherein the fourth beam patch (projector to screen 316) is in a downward vertical direction.

However, Miyawaki does not disclose in this particular embodiment a 1st and 2nd refractive optical element disposed in the first beam path, nor does Miyawaki disclose the 2nd reflecting mirror having a concave surface. Miyawaki in Fig 10, discloses a light source 301 which is reflected via parabolic reflector 302 towards mirror 303.

It is noted by the examiner that in other embodiments (Figures 1, 2 and 8), Miyawaki discloses the use of other optical elements including an integrator 3, PS converter 4, modulator 5 and relay lens 6.

The examiner also relies on the applicant's own AAPA (Fig 1) which discloses the use of two refractive optical elements 110, 112.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Miyawaki which discloses a projection system which includes multiple beam paths and elements, to include conventional refractive optical elements as done in AAPA (Fig 1), in order to provide mirror 303 with a coherent light beam from light source 301.

Regarding the 2nd reflecting mirror being concave. As stated above, Miyawaki does not disclose the type of mirror. It is also widely known that mirror come in a variety of shapes including concave and convex etc. Thus based upon the type of system, and the position of the beam received and reflected by the mirror would determine the ideal shape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Miyawaki which discloses the use of a reflecting mirror to utilize a mirror which received and reflected the light in accordance with the design/layout of the system, where the designer has the option of using a concave lens if desired.

In considering claims 2-4 and 11-13,

Miyawaki does not specifically disclose the angles/degrees with respect to the beam paths and the x and y axis.

However, the examiner maintains that based upon the design of the system, including the size of the projection device and its elements, provides the designer the ability to use a multitude of different angles in relation to the beam paths and different axis, therefore the distinction of between the axis and angles is not patentable.

In considering claim 5,

a) the claimed a lamp reflector... is met by parabolic reflector 302 (Fig 10).

b) the claimed a color wheel... is met by color wheel 311 (Fig 10).

c) the claimed a light integrator is met by integrator 305.

However, Miyawaki does not disclose an integrator in the 1st beam path.

Miyawaki discloses an integrator in the 2nd beam path.

It is also known that an integrator is a known device to receive/collect and transmit light in a efficient manner.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Miyawaki which discloses a projection system which

utilizes an integrator in the 2nd beam path, by either moving integrator 305, or adding an additional integrator in the first beam path, which would efficiently transmit the light from light source 301 to mirror 303.

In considering claims 6-7,

Miyawaki does not specifically disclose the focal length of the optical elements. However, the examiner maintains that since there are a variety of focal length lenses available, the mere use of a particular size(s) is not a patentable feature.

In considering claims 8 and 14,

Miyawaki does not disclose a housing/shell nor the sizes in which the projection system is incorporated into.

The use of an outer shell/housing is a conventional feature of a projection unit. Therefore, the examiner takes "OFFICIAL NOTICE" in regards to a projection system which incorporates it's elements into the housing.

Regarding the occupied volume of the housing (claimed 5.5 inches³). The examiners position is that based upon the size of the outer shell/housing and the placement/size of the elements included in the housing can provide a variety of occupied volumes, thus the claiming of a particular volume is not a patentable feature.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Miyawaki which discloses a projection system, to include a conventional shell/housing for the elements making the system portable, and also using a housing which includes all the elements, where the elements occupy a most of the volume of the shell, which would provide an ideal sized housing for the system.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)305-HELP.

General information about patents, trademarks, products and services offered by the United States Patent and Trademark Office (USPTO), and other related information is available by contacting the USPTO's General Information Services Division at:

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(TDD) 703-305-7785

An automated message system is available 7 days a week, 24 hours a day providing informational responses to frequently asked questions and the ability to order certain documents. Customer service representatives are available to answer questions, send materials or connect customers with other offices of the USPTO from 8:30 a.m. - 8:00p.m. EST/EDT, Monday-Friday excluding federal holidays.

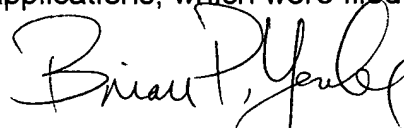
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General information brochures can also be obtained in person from the Patent Search Room located in Crystal Plaza 3, Room 1A03, 2021 South Clark Place, Arlington, VA 22202.

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patent applications and pre-grant publication submissions in electronic publication-ready form. EFS includes software to help customers prepare submissions in extensible Markup Language (XML) format and to assemble the various parts of the application as an electronic submission package. EFS also allows the submission of Computer Readable Format (CRF) sequence listings for pending biotechnology patent applications, which were filed in paper form.



BRIAN P. YENKE
Primary Examiner
Art Unit 2614



B.P.Y.
17 April 2004